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ABSTRACT

In almost all states, there is substantial local variation in per pupil expenditures for public elementary and secondary education. This results from the mix of state, local, and federal revenues received by most local educational agencies (LEAs), local variations in student needs, cost of providing services, and ability and willingness to raise local revenues. National interest in such variations is increasing, due to several state supreme court decisions regarding the constitutionality of state school financing systems. Also, the ability of LEAs to pay for mandated reforms has been questioned. A bill (H.R. 3850) has been introduced in the 101st Congress providing federal support for greater equalization of state school finance programs. Problems arise concerning the definition of "equal spending per pupil." State school finance programs frequently distribute aid in proportion to each LEA's number of "high cost" pupils, rather than in proportion to total enrollment. Another important factor is differences in taxable resources per pupil--the ability to pay for education. A major barrier to analyzing expenditure variations is lack of a reliable national data source. The Census Bureau's 1986-87 survey of school finances is the most current source, but the quality of data for individual LEAs is questionable. In this report, two measures of expenditure disparity are calculated for each state: the range of expenditures between the 10 highest and 10 lowest spending LEAs in the state; and the coefficient of variation from the mean. The analysis proved inconclusive regarding local causality factors influencing per pupil expenditure variations. (Author/MLH)

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CRS Report for Congress

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Expenditures In Public School Districts: Why Do They Differ?

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Expenditures In Public School Districts: Why Do They Differ?

SUMMARY

In almost all States, there is substantial local variation in expenditures per pupil for public elementary and secondary education. This results partially from the mix of State, local, and Federal revenues received by most local educational agencies (LEAs), as well as local variations in pupil needs, costs of providing services, plus ability and willingness to raise local revenues.

National interest in such variations in education spending is increasing, largely as a result of decisions by a number of State supreme courts--such as those of Texas, Kentucky, and New Jersey--that local expenditure disparities under their school finance systems violate State constitutions. Also, as many of the education reforms adopted in the 1980s evolve, increased concern has been expressed about the ability of LEAs to pay for many of the recommended, or even mandated, changes in their schools. A bill has been introduced in the 101st Congress (H.R. 3850) that would provide Federal support for greater equalization of State school finance programs.

School finance equalization implies "equal spending per pupil" among the LEAs of a State. However, the meanings of both "equal" and "per pupil" may vary widely. State school finance programs frequently distribute aid in proportion to each LEA's number of "high cost" pupils, rather than in proportion to total enrollment. A primary cause of differences in expenditures per pupil among LEAs are differences in taxable resources per pupil--i.e., the ability to pay for education. In addition, virtually all State school finance systems allow considerable local variation in expenditures based on differences in willingness to pay local taxes for education.

A major barrier to analyses of variations in expenditures per pupil for public elementary and secondary education has been the lack of a reliable, national data source. The only current source is a Census Bureau compilation of data from all LEAs for its 1986-87 survey of school finances, and there are concerns about the quality of these data for individual LEAs. Two measures of expenditure disparity are calculated for each State: the range of expenditures between the 10 highest and 10 lowest spending LEAs in the State, and a more comprehensive statistic called the coefficient of variation the average variation from the mean, expressed as a percentage of the mean.

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EXPENDITURES IN PUBLIC SCHOOL DISTRICTS: WHY DO THEY DIFFER?

INTRODUCTION

For many years there has been relatively little national interest in State school finance systems, and differences in local spending per pupil within States. This has resulted from several factors. First, the Federal financial contribution to elementary and secondary education revenues has always been relatively marginal, and has become more so in recent years.[1] Second, in 1973, the U.S. Supreme Court decided, in the case of *Rodriguez v. San Antonio Independent School District*, that differences in local expenditures per pupil within a State did not violate the U.S. Constitution, as long as these differences were the result of State actions intended to meet a public purpose, such as increased local control of education. Third, much of the national debate over educational quality in recent years has focused on issues--such as course requirements or school choice--other than the availability of funds. Finally, some individuals have interpreted the available research on the relationship between education expenditures and pupil achievement as indicating that the relationship is weak, that spending has little effect on achievement, or at least little effect in comparison to the effects of such factors as pupil family background.

However, national interest in public elementary and secondary education finance appears to be increasing, at least modestly, as we begin the last decade of the 20th century. This interest has been spurred by decisions of a number of State supreme courts--such as those of Texas and Kentucky--that school finance systems violate State constitutions, plus legal challenges to school finance systems in a number of other States. While such State court actions have taken place sporadically since, and even before the Rodriguez decision in 1973, their pace, and the degree of public attention paid to them, seem to be increasing currently.

Further, as many of the education reforms adopted in the 1980s are implemented and evolve, increased attention has been drawn to questions of the ability of local educational agencies (LEAs) to pay for many of the recommended, or even mandated, changes in their schools. This concern

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[1]According to the U.S. Department of Education's National Center for Education Statistics, the Federal share of revenues for public elementary and secondary education has declined from 9.8 percent in 1979-80 to 6.3 percent in 1987-88.

applies specifically to the ability of LEAs to implement the national goals for education that were adopted by the National Governors Association in January 1990.[2] A separate but related concern is that many of the new education programs adopted by States as part of recent reforms have not directly taken LEA wealth or income into consideration, and may have inadvertently increased resource inequalities among LEAs.

At least one bill has been introduced in the 101st Congress that would provide Federal support for greater equalization of State school finance programs. H.R. 3850, the Fair Chance Act, introduced by Representative Hawkins, would eliminate State control over Federal education aid to States that did not meet certain equalization standards in their school finance programs. Thus far, hearings have been held on H.R. 3850, but no further action has been taken on the proposal.

This report provides information on the degree of disparity in education expenditures among LEAs in the States, plus a brief discussion of the primary reasons for these disparities. The available school finance data for most States have several important limitations, especially with respect to individual LEAs. However, for virtually all States, the available data do provide general guidance on the overall level of expenditure disparities, including indications of the States where these differences might be greatest.

There are several important aspects of school finance issues that this report does not address. These include:

- whether existing expenditure disparities violate Federal or State constitutions or statutes,
- the potential degree of influence of expenditures on educational quality, and
- the structure of school finance systems in individual States.

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[2]For information on these goals and issues related to them, see U.S. Library of Congress. Congressional Research Services. *National Education Goals: Where Are We Now?*. CRS Report for Congress 90-169 EPW, by James B. Stedman, *et. al.* Washington, Mar. 26, 1990.

WHAT IS THE RANGE IN EXPENDITURES PER PUPIL FOR PUBLIC ELEMENTARY AND SECONDARY EDUCATION IN THE STATES?

Sources of Data and Their Limitations

A major barrier to analyses of variations in expenditures per pupil for public elementary and secondary education has been the lack of a reliable, national data source. While all States collect, and some States regularly report, school finance data for LEAs in their State, no national agency has collected or reported these data for all LEAs for several years. Both the U.S. Department of Education's (ED's) National Center for Education Statistics (NCES) and the U.S. Bureau of the Census compile and report school finance data at the State level each year. However, ED reports virtually no finance data for individual LEAs, while the Census Bureau has published finance data only for individual LEAs with total enrollment of 15,000 or more pupils.

Efforts to rectify this situation in the *future* are being undertaken by NCES and Census. In conjunction with plans to compile population, income, housing, and related data from the 1990 Census by LEA, the NCES and Census Bureau also plan to conduct joint school finance data collections, beginning in the near future, that will provide data for all LEAs in the Nation.

Census Bureau Data

In the meantime, the Census Bureau has already compiled data from all LEAs for its 1986-87 survey of school finances, although they continue to publish only the data for LEAs with enrollment of 15,000 or more.[3] Basic LEA revenue and expenditure data are included in this Census data file, along with fall 1986 enrollment figures. Data from this file are used in table 1 of this report, because this Census file provides the **only** current, national data on revenues and expenditures at the LEA level. However, as listed below, there are **several concerns** about the quality--the validity and consistency--of these data, especially in individual LEA cases. Thus, we have attempted to use these data in ways that would minimize the effects of individual cases of erroneous data.

Major limitations to the Census Bureau expenditure data, and the calculations of expenditure disparities among each State's LEAs that are based upon these data, are listed below.

- The pupil count used in these calculations is total enrollment at one point in the school year; many State school finance systems are based on other types of pupil counts, such as average daily

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[3]We obtained these data through the assistance of Larry Macdonald and Tim Antisdel of the Census Bureau.

attendance. Differences in expenditures per enrolled pupil might be significantly reduced if average daily attendance were used as the pupil count instead.

- These calculations do not adjust for differences among LEAs in pupil needs, which in many cases are recognized by categorical State and Federal aid programs that provide additional funds to LEAs with high proportions of special needs pupils. For example, expenditures per pupil might be relatively high in an LEA because it has high numbers of handicapped, limited English-proficient, or poor children. There might also be additional costs associated with population sparsity or density, for which these calculations also do not account. These are among possible reasons for expenditure disparities that most analysts would generally consider to be legitimate.

- There are significant differences among LEAs in a State in the costs of providing educational services. In particular, salaries for teachers and other staff vary widely among LEAs in many States. While salary variations might partially reflect differences in teacher "quality", they are also influenced by such factors as overall labor supply and demand conditions in each area, average experience of the LEA's teachers, general living costs, or the extent and effectiveness of teacher unions.

- There are certain specific problems with the data included in the Census Bureau survey. For example, State government expenditures for teacher retirement that are not passed through LEAs are excluded. Only expenditures for current operations are included in table 1, not capital expenditures for school construction, etc. There may be significant, unresolved differences in accounting for expenditures by different States and LEAs; e.g., differences in accounting for expenditures as "current" versus "capital," or as "elementary and secondary education" versus "adult education" expenditures. There may also be significant differences in State and local accounting periods.

- Some LEAs may serve special purposes with especially high or low costs. For example, some secondary LEAs provide only vocational and technical education. We have excluded these whenever we could identify them, as well as certain LEAs that serve only Indian reservations. Other LEAs may provide specific types of education of which we are unaware.

- All of these data apply to the 1986-87 school year, 3 years ago. Significant changes may have occurred in the disparity of expenditures per pupil among LEAs in a State since that time. Changes may also have occurred in LEA boundaries or structure since 1986-87.

- States may have made errors in collecting and reporting data to the Census Bureau, especially with respect to the LEAs with enrollment below 15,000, for which data are compiled, but not published, by the Census Bureau.

- For one State, Vermont, the Census Bureau data may be incorrect. Therefore, calculations based on data provided directly by the State are shown in table 1 for Vermont (see following section). There might be similar, systematic problems with the data for other States; if so, we are not aware of them.

- Finally, as is described in the second part of this report, some States' school finance systems are aimed toward equalizing the amount of funds per pupil that can be raised for a given tax rate, not equalizing the ultimate expenditure level. In such States, differences in expenditures per pupil may reflect the preferences of voters as well as differences in ability to pay.

Additional Data for Selected States

For three States--Michigan, Maryland, and Vermont--we have data provided directly by the State education agency on expenditures per pupil for all LEAs in the State. We prepared disparity calculations based on these data partly in order to compare them with the Census data and partly in order to be able to present data for Vermont. These data from individual State sources are shown in table 2, along with data for those States from the Census file (except for Vermont, where only the State data are used). As shown in table 2, calculations based on data provided directly by the State were sufficiently similar to those based on the Census data that we felt confident in using the State-provided data in table 1 for Vermont.

Variation in Expenditures Per Pupil Within States

The following table 1 lists two measures of disparity in expenditures per pupil for elementary and secondary education among the LEAs in each State. Expenditure disparity measures are calculated by State and by type of LEA: elementary, secondary, or unified. LEAs are compared only to those of similar type because costs are generally higher for secondary than elementary education.

Range

One of the measures of expenditure disparity shown in table 1 is the **range** of expenditure per pupil levels among the State's LEAs--i.e., the difference between the highest and lowest spending LEAs in the State. The table provides both the average expenditure per pupil for the highest and lowest expenditure LEAs in the State, plus the ratio of the average for high spending LEAs divided by the average for low spending LEAs.

To avoid using marginal cases where expenditures per pupil are very high largely because the LEA's enrollment is quite small, unified LEAs[4] with total enrollment of fewer than 500 pupils, and separate elementary or secondary LEAs with fewer than 250 pupils, are excluded. Selection of these particular minimum enrollment levels is arbitrary. Use of lower thresholds would generally result in wider variation in expenditures per pupil within States, while use of higher thresholds would lead to less variation.

Further, our calculations of expenditure variations are not based on single LEA expenditure levels, but on those for groups of LEAs that have high or low expenditure levels. Thus, each State's range of expenditures per pupil is based on the difference in spending between the averages of the 10 highest and 10 lowest spending LEAs in the State.[5] This was done to minimize the effects of individual LEA cases for which the data might be flawed, or which have especially high or low expenditures for unique reasons.[6]

Coefficient of Variation

The second measure of expenditure disparity shown in table 1 is the **coefficient of variation** for expenditures per pupil among the LEAs of each State. Compared to the expenditure range statistic described above, the coefficient of variation has the distinct advantage of taking into account the expenditure levels of **all** of the LEAs in the State.[7] However, this gain is accompanied by the disadvantages of a measure that is relatively complex and the meaning of which may not be intuitively obvious.

The coefficient of variation of a distribution of numbers--such as the average expenditures per pupil for LEAs in a State--is defined as the "standard deviation" of these numbers divided by the mean, or average. The "standard deviation" is the average variation from their mean of a distribution of numbers.[8] The standard deviation has the advantage of being a measure

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[4]Unified LEAs provide both elementary and secondary education.

[5]In a few States with a small number of LEAs meeting our enrollment size criteria, expenditure ranges were calculated based only on the five highest and lowest spending LEAs.

[6]For example, extreme population dispersion.

[7]In this case, all LEAs in the State that meet the minimum enrollment size thresholds described earlier.

[8]More specifically, the standard deviation is the "absolute value" of the average variation from the mean--i.e., numbers both above and below the mean are treated as positive numbers. This is accomplished by first squaring the differences from the mean (which is equal to the "variance"), then taking the positive square root of the resulting number.

of variation that takes all cases into account. However, the standard deviation has the disadvantage of indicating only the average dispersion from the mean, while the value of the mean itself may vary widely for different distributions. This is applicable to average expenditures per pupil, which are much higher for some States than others.

The coefficient of variation adjusts for these differences in the Statewide average per pupil expenditure because it is the standard deviation expressed as a percentage of the mean. For example, if the coefficient of variation for a distribution of numbers is 25 percent, then the average variation from the mean for these numbers is equal to 25 percent of the mean. As this percentage increases, the overall dispersion of the numbers on which the coefficient of variation was calculated becomes greater. In this case, the higher the coefficient of variation, the greater is the aggregate disparity in expenditures per pupil among LEAs in a State.

An example might help to illustrate the advantage of using the coefficient of variation as a measure of LEA expenditure disparities. Assume there are two hypothetical States, "Columbia" and "Fredonia", each with six LEAs. The distribution of expenditures per pupil among the LEAs of each State is as follows:

LEA	"Columbia"	"Fredonia"
1	$2,500	$1,500
2	4,400	1,600
3	4,500	1,900
4	4,600	5,300
5	4,700	5,400
6	6,500	5,500
Mean	4,533	3,533
Standard Deviation	1,159	1,871
Range	4,000	4,000
Coefficient of variation	26%	53%

For each of these two hypothetical States, the range of expenditures, between the highest and lowest spending LEAs in the State, is the same--$4,000. However, the overall dispersion around the statewide mean is much greater for Fredonia, where all LEA expenditure levels are very high or low, than for Columbia, where most are near the average. This difference in overall dispersion is reflected in the standard deviation, which is higher for Fredonia ($1,871) than Columbia ($1,159), but this understates the difference in dispersion in the two distributions because it fails to adjust for the substantial difference in average values ($4,533 for Columbia versus $3,533 for

Fredonia). The coefficient of variation, which is 53 percent for Fredonia, but much lower--26 percent--for Columbia adjusts for this difference in the Statewide mean. Thus, the average variation from the mean is 53 percent (of the mean) for Fredonia's LEAs, and 26 percent for those in Columbia.

TABLE 1. Data on School Expenditure Variations In the States, 1986-87

State	LEA type	Average expenditure per pupil for 10* lowest LEAs	Average expenditure per pupil for 10* highest LEAs	Ratio of averages for highest to lowest LEA groups	Coefficient of variation
Alabama	unified	$1,800	$2,754	1.5	11.8%
Alaska	unified	6,113	11,886	1.9	49.9
Arizona	elementary	2,662	4,224	1.6	17.2
	secondary	3,084	4,452	1.4	22.0
	unified	2,787	5,469	2.0	22.1
Arkansas	unified	1,967	3,138	1.6	12.7
California	elementary	2,655	5,267	2.0	13.3
	secondary	3,427	5,010	1.5	11.4
	unified	3,172	5,343	1.7	12.7
Colorado	unified	2,858	4,645	1.6	16.2
Connecticut	elementary	3,884	5,429	1.4	15.5
	unified	3,756	6,129	1.6	14.6
Delaware	unified	3,647	4,535	1.2	10.4
Florida	unified	3,267	4,426	1.4	10.2
Georgia	unified	2,157	4,513	2.1	18.8

*Because of their small number of LEAs meeting the enrollment size criteria we applied, only the lowest and highest **five** LEAs were considered for Nevada (unified), New Hampshire (elementary), Oregon (elementary and secondary), Rhode Island (unified), Wisconsin (elementary), and Wyoming (unified) LEAs. Also note that the District of Columbia and Hawaii are excluded from table 1 because they are single LEAs.

TABLE 1. Data On School Expenditure Variations In the States, 1986-87--Continued

State	LEA type	Average expenditure per pupil for 10[a] lowest LEAs	Average expenditure per pupil for 10[a] highest LEAs	Ratio of averages For highest to lowest LEA groups	Coefficient of variation
Idaho	unified	$1,833	$3,016	1.6	16.7%
Illinois	elementary	2,004	6,260	3.1	31.2
	secondary	3,179	6,631	2.1	24.9
	unified	2,116	4,266	2.0	14.8
Indiana	unified	2,349	4,817	2.1	18.2
Iowa	unified	2,813	3,703	1.3	6.8
Kansas	unified	2,764	4,981	1.8	15.3
Kentucky	unified	1,909	3,212	1.7	13.8
Louisiana	unified	2,196	3,362	1.5	16.2
Maine	elementary	2,750	4,169	1.5	19.9
	unified	2,597	3,921	1.5	11.9
Maryland	unified	3,273	4,052	1.2	13.1
Massachusetts	elementary	2,752	5,199	1.9	22.9
	secondary	4,273	7,915	1.9	24.4
	unified	3,019	6,323	2.1	19.0
Michigan	unified	2,484	5,817	2.3	18.8
Minnesota	unified	2,965	5,686	1.9	14.4
Mississippi	unified	1,807	3,096	1.7	13.8
Missouri	unified	2,103	4,841	2.3	40.4
Montana	elementary	2,522	5,871	2.3	90.3
	secondary	3,237	6,227	1.9	30.3
Nebraska	unified	2,734	4,341	1.6	18.6

TABLE 1. Data on School Expenditure Variations In the States, 1986-87--Continued

State	LEA type	Average expenditure per pupil for 10[a] lowest LEAs	Average expenditure per pupil for 10[a] highest LEAs	Ratio of averages for highest to lowest LEA groups	Coefficient of variation
Nevada	unified	$3,300	$3,973	1.2	13.5%
New Hampshire	elementary	2,909	5,166	1.8	39.9
	unified	2,832	4,396	1.6	15.8
New Jersey	elementary	3,091	7,304	2.4	21.9
	secondary	3,955	7,745	2.0	23.1
	unified	3,619	6,719	1.9	15.1
New Mexico	unified	2,722	4,270	1.6	16.8
New York	unified	3,936	10,349	2.6	26.4
North Carolina	unified	2,731	3,777	1.4	8.9
North Dakota	unified	2,647	3,458	1.3	11.1
Ohio	unified	2,407	6,622	2.8	23.1
Oklahoma	unified	1,998	3,561	1.8	14.0
Oregon	elementary	2,951	4,125	1.4	10.9
	secondary	3,740	4,741	1.3	10.9
	unified	3,196	4,801	1.5	11.7
Pennsylvania	unified	2,543	6,144	2.4	20.2
Rhode Island	unified	3,766	4,856	1.3	8.7
South Carolina	unified	2,424	3,364	1.4	9.7
South Dakota	unified	2,489	3,286	1.3	10.0
Tennessee	unified	1,739	3,168	1.8	17.6
Texas	unified	1,848	5,243	2.8	19.0

TABLE 1. Data On School Expenditure Variations In the States, 1986-87--continued

State	LEA type	Average expenditure per pupil for 10[a] lowest LEAs	Average expenditure per pupil for 10[a] highest LEAs	Ratio of averages for highest to lowest LEA groups	Coefficient of Variation
Utah	unified	$2,199	$3,257	1.5	18.6%
Vermont[b]	elementary	2,506	4,666	1.9	18.4
	unified	3,219	4,468	1.4	16.9
Virginia	unified	2,606	5,114	2.0	19.7
Washington	unified	2,899	4,633	1.6	11.9
West Virginia	unified	2,831	3,697	1.3	9.9
Wisconsin	elementary	3,252	6,199	1.9	23.7
	unified	3,260	5,703	1.7	13.1
Wyoming	unified	4,311	7,461	1.7	26.2

[b]Source: Table reprinted in U.S. Congress. House. Committee on Education and Labor. Subcommittee on Elementary, Secondary, and Vocational Education. *Hearing on H.R. 3850, The Fair Chance Act,*, p. 134-141. No data are used from the Census file for Vermont.

TABLE 2. Additional Expenditure Data For Selected States, 1986-87

State	LEA type	Average expenditure per pupil for 10 lowest LEAs	Average expenditure per pupil for 10 highest LEAs	Ratio of averages for highest to lowest LEA groups	Coefficient of variation
Maryland					
Census source	unified	$3,273	$4,052	1.2	13.1%
State source[a]	unified	3,624	4,668	1.3	14.0
Michigan					
Census source	unified	2,484	5,817	2.3	18.8
State source[b]	unified	2,423	5,927	2.5	20.4
Vermont					
State source[c]	elementary	2,506	4,666	1.9	18.4
	unified	3,219	4,468	1.4	16.9

[a]Source: Maryland Department of Education, *121st Annual Report*, table 100.

[b]Source: Michigan Department of Education, *Michigan K-12 School Districts Ranked by Selected Financial Data, 1987-88*, p. 8-37.

[c]Source: Table reprinted in U.S. Congress. House. Committee on Education and Labor, Subcommittee on Elementary, Secondary, and Vocational Education. *Hearing on H.R. 3850, The Fair Chance Act.* p. 134-141.

Brief Analysis of Expenditure Disparity Data

Keeping in mind the many limitations to the Census data on which the calculations in table 1 were based, as well as potential inconsistencies resulting from the separate sources for State data in table 2, it is nevertheless worthwhile to examine general patterns in these data. Particular attention is given to States that these data indicate as having the greatest variations in expenditures per pupil among their LEAs. Variation is measured in terms of the two indicators in tables 1 and 2--range in expenditures per pupil between the 10 lowest and highest spending LEAs, and the coefficient of variation, or average variation from the mean, in percentage terms. Again, only LEAs meeting our arbitrary enrollment size thresholds are considered. Also, unless indicated otherwise, the calculations are based on the Census data in table 1.

Tables 3 and 4 list the 10 States with the highest (table 3) and lowest (table 4) ratios of expenditures per pupil, between the 10 highest and 10 lowest spending LEAs, and the 10 cases with the highest (table 3) and lowest (table 4) coefficient of variation for expenditures per pupil among the State's LEAs. State/LEA type cases that appear in both lists of a table are printed in **bold**. In each of the two columns of the tables, States are listed in order of their ranking on the indicated measure--thus, in the coefficient of variation column for table 3, Montana elementary LEAs had the highest figure, and Massachusetts secondary LEAs the 10th highest.

TABLE 3. The 10 State/LEA Type Cases With the Highest Ratios of High To Low Expenditure LEAS, and With the Highest Coefficient Of Variation In LEA Expenditures Per Pupil

10 State/LEA type cases with the highest ratios of expenditures per pupil between the 10 highest and 10 lowest spending LEAs	10 State/LEA type cases with the highest coefficient of variation in expenditures per pupil
Illinois (elementary)	**Montana (elementary)**
Texas (unified)	Alaska (unified)
Ohio (unified)	**Missouri (unified)**
New York (unified)	**Illinois (elementary)**
New Jersey (elementary)	Montana (secondary)
Pennsylvania (unified)	New Hampshire (elementary)
Michigan (unified)	**New York (unified)**
Missouri (unified)	Wyoming (unified)
Montana (elementary)	Illinois (secondary)
4 State tie*	Massachusetts (secondary)

*Georgia (unified), Illinois (secondary), Indiana (unified), and Massachusetts (unified).

TABLE 4. The 10 State/LEA Type Cases With The Lowest Ratio of High of Low Expenditure LEAS, and With The Lowest Coefficient Of Variation In LEA Expenditures Per Pupil

10 State/LEA type cases with the lowest ratios of expenditures per pupil between the 10 highest and 10 lowest spending LEAs	10 State/LEA type cases with the lowest coefficient of variation in expenditures per pupil
District of Columbia (unified)	**District of Columbia (unified)**
Hawaii (unified)	**Hawaii (unified)**
Delaware (unified)	**Iowa (unified)**
Maryland (unified)	**Rhode Island (unified)**
Nevada (unified)	North Carolina (unified)
Iowa (unified)	South Carolina (unified)
North Dakota (unified)	West Virginia (unified)
Oregon (secondary)	**South Dakota (unified)**
Rhode Island (unified)	Florida (unified)
South Dakota (unified)	**Delaware (unified)**

While the many limitations to the Census LEA finance data file must be kept in mind, certain States and LEA types appear to have especially high or low disparities in expenditures, whether measured on the basis of the range of expenditures or the more comprehensive coefficient of variation. The four cases that rank among the 10 highest on both measures in table 3--the unified LEAs of Missouri and New York, plus the elementary LEAs of Illinois and Montana--may be worthy of particular attention. It is also of interest that several of the States where school finance systems have been challenged recently in State courts are among the 13 States listed in table 3.[8] These States include Alaska, Indiana, Massachusetts, Michigan, Montana, New Jersey, and Texas. There were State court challenges earlier in the 1980s to school finance systems that were unsuccessful in New York and Michigan, but successful (at least judicially) in Wyoming. The school finance systems of Pennsylvania were unsuccessfully challenged in State courts in the 1970s. New State court challenges to the school finance systems of Illinois,

[8]See, for example, *School Finance Litigation of the 1980s*, by Mary Jane Connelly and Jack McGee, Journal of Education Finance, spring 1987, p. 578-591; *Update: Status of Educational Finance Litigation* , Education and Law Perspectives, Brigham Young University, p. 9-10; *The Constitutionality of the K-12 Funding System in Illinois, Volume I: Legal Issues*, by David L. Franklin, *et al.*, Illinois State University; and *Legal Challenges to Finance Formulas On Court Dockets in at Least 12 States*. Education week, May 2, 1990. p. 14, 19.

Pennsylvania, and Wyoming are reportedly being planned.[9] However, at least one State whose school finance system has been successfully challenged recently in State court, Kentucky, is not included in table 3.

States highlighted in table 4, because they are among those with the lowest expenditure disparities using either the range or the coefficient of variation, include the single-LEA areas of Hawaii and the District of Columbia, as well as the States of Delaware, Iowa, Rhode Island, and South Dakota. The relatively small size and homogeneity of Delaware and Rhode Island presumably influence their low degree of expenditure variation. Also prominent in table 4 are several States with predominantly broad-based, usually county-level, LEAs: Florida, West Virginia, North and South Carolina, Nevada, and Maryland. Nevertheless, in contrast to expectations, the school finance systems of two States listed in table 4, North Dakota and Oregon,[10] have recently been challenged in State courts.[11]

WHAT ARE THE REASONS FOR VARIATIONS IN EXPENDITURES PER PUPIL FOR PUBLIC ELEMENTARY AND SECONDARY EDUCATION?

The remainder of this report provides general information on the structure of State school finance systems, with an emphasis on aspects of those systems that result in local expenditure variations. This section begins with a discussion of the concept of school finance equalization, which is the goal of much of the current debate and activity related to school finance. This includes a discussion of why some analysts do not share this goal, or at least do not consider it to be a high priority. Next, the revenue sources for public elementary and secondary education are described. Finally, the major reasons for variations in local expenditures in current State school finance systems are discussed. These include sources of variation that many consider to be appropriate--for example, higher expenditures on behalf of pupils whose education imposes relatively high costs, such as handicapped pupils--and sources of variation that many consider to be inappropriate, such as differences in ability to pay for education.

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[9]See *Legal Challenges to Finance Formulas On Court Dockets in at Least 12 States* , Education week, May 2, 1990. p. 14, 19.

[10]While only the secondary school districts of Oregon are listed in table 4, the expenditure ratio and coefficient of variation are also relatively low for the elementary and unified districts in that State. See table 1.

[11]See *Legal Challenges to Finance Formulas On Court Dockets in at Least 12 States*. Education week, May 2, 1990. p. 14, 19.

Concept of School Finance Equalization

Throughout the remainder of this report, reference will be made to the concept of *school finance equalization*. While this concept is frequently used, and its broad implications may seem clear, its specific meanings can be varied and complex.

School finance equalization would seem to imply "equal spending per pupil" among the LEAs of a State. However, the meanings of both "equal" and "per pupil" may vary widely. Rarely does anyone advocate absolute equality of dollars spent on behalf of every pupil in the State. It is generally agreed that school finance programs should account for certain types of pupils whose education imposes higher than average costs on the LEA. As is described further below, such high cost pupils might include pupils who are handicapped, are from poor families, have limited proficiency in the English language, live in sparsely populated areas, etc. If a State school finance program provides more funds on behalf of such high cost pupils than other pupils, and if the distribution of these pupils is uneven across the State's LEAs, then a State's school finance system might be considered to be equalized yet have significant differences in spending per enrolled pupil overall, as is calculated in the first part of this report.

School finance equalization would seem to imply "equal spending per pupil" among the LEAs of a State. However, the meanings of both "equal" and "per pupil" may vary widely.

However one adjusts for the distribution of different types of pupils, there are two basic ways in which school finance equalization has been defined. One method is based on equalization of the level of revenues or expenditures per pupil, however "pupil" might be defined,[12] while the other focuses on equalizing the amount of funds per pupil that each LEA could raise per unit of local tax rate. The first method equalizes actual amounts of funds available, while the second equalizes the ability to raise revenues. These two basic concepts of school finance equalization are discussed in the remaining portions of this report.

[12]As described further below, under programs for pupils with special needs, many States use weighting schemes that provide additional aid on the basis of certain types of pupils whose education is assumed to cost more than average. Such pupils may include those who are handicapped, or from non-English language backgrounds. States also vary in terms of whether pupil counts are based on average daily attendance, total fall enrollment, etc.

Value of School Finance Equalization

No matter how the goal of school finance equalization is defined, its desirability, or at least its priority, may be debated. While many individuals place high value on equalization of educational resources at least within, if not also between, States, others do not share this value. Part of this debate turns on assumptions about the existence and strength of relationships between educational spending and educational outcomes. Those who favor greater equalization of educational expenditures tend to believe that the level of expenditures significantly affects educational outcomes, while those opposing such equalization tend to deny that existing variations in spending have substantial effect on outcomes, after adjusting for such factors as family background. The scope, issues, and evidence related to this debate are too extensive to be included in this report. It might simply be noted that available evidence is sufficiently ambiguous to offer support both for those who believe, and those who do not believe, that there is a strong association between educational outcomes and the level of educational expenditures, as long as some minimal level of spending is provided in all localities. A major difficulty in interpreting the evidence is that individual family income and education level, average income and education level for the LEA, education spending per pupil, and pupil achievement and other educational outcomes all tend to be positively associated with one another, so it is very difficult for statistical methods to distinguish the specific effects of any of these individual characteristics on educational outcomes.

However the goal of school finance equalization is defined, its desirability may be debated.

There are other bases for opposing, or at least deemphasizing, greater equalization of educational expenditures. Those who place high value on local control of schools may also value maximizing local ability to determine the level of education spending. It is widely assumed that the distribution of authority over public schools among different levels of government is associated with the share of funds provided by each level. If this is true, then maximizing the extent to which education revenues are locally raised might maximize local control over educational policies and practices. They might also argue that the selection of the State--as opposed to the LEA, or the Nation--as the level of government at which education expenditures should be equalized is arbitrary. Further, families dissatisfied with the level of education spending in their current locality may "vote with their feet" by moving to another LEA. However, many families may lack the income necessary to move to high spending LEAs if their expenditure level is based on high average property values.

In contrast, those favoring increased equalization argue that public elementary and secondary education is primarily a State function. It is typically defined as such in State constitutions, States generally contribute a higher share of revenues than other levels of government, and State

governments are the primary source of education policies in most States. Therefore, setting expenditures levels on a statewide basis may be appropriate.

Another basis for debate over the value of school finance equalization is LEA size. As is discussed below, inequalities in educational expenditures appear to be associated with average LEA size that is small, relative to total enrollments, within a State. Some believe that small LEAs are valuable, and are worth preserving even at the cost of significant intrastate inequalities in spending. The values associated with small LEAs might include: a greater perceived ability to influence school system policies; greater homogeneity of the student population, which might result in policies and programs better tailored to meet specific educational needs; or smaller average school size, which might lead to closer knit school communities, with more personal relationships between students and teachers or other school staff. Some researchers have concluded that, all other relevant factors being equal, smaller LEA size is associated with greater student achievement.[13] However, many analysts believe that the claimed advantages of small LEAs are debatable, that there are several disadvantages to smaller LEAs, such as limited educational offerings, and that if a high degree of student homogeneity is ever advantageous it probably is so only for students from advantaged families.

In practice, most State school finance programs may be said to reflect a compromise between the values of Statewide equalization and the values described above that frequently conflict with equalization goals. While virtually all States have programs that equalize educational resources to some extent, very few--if any--States may be said to fully equalize educational expenditures among LEAs in the State, however such equalization might be defined, other than the "statewide" LEAs of Hawaii and the District of Columbia.[14]

Intrastate Versus Interstate Equalization

As indicated above, virtually all current debate over school finance equalization in the United States is focused on equalization among the LEAs within States, not on expenditure disparities across States. Such interstate disparities certainly exist: in 1987-88, the average per pupil expenditure

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[13]See, for example, *Expenditure and Size Efficiencies of Public School Districts*, by Herbert C. Walberg and William J. Fowler, Educational researcher, Oct. 1987. p. 5-13.

[14]In addition to these, the school finance systems of California, New Mexico, and Washington are sometimes considered to be fully State funded, and by implication, "equalized", because a high percentage of revenues are provided directly by the State government, and even the amount of local revenues is controlled by State policy. See *Public School Finance Programs of the United States and Canada, 1986-87*, by Richard Salmon, *et al.*, 1988. p. 5.

varied from $2,454 in Utah to $7,971 in Alaska.[15] Further, legislation introduced in the 101st Congress (H.R. 3850, title II) would authorize Federal grants to decrease the degree of interstate disparity in education expenditures, as well as attempt to reduce intrastate disparities. Nevertheless, analysts almost always emphasize equalization of expenditures among LEAs for a variety of reasons: lower aggregate costs to equalize expenditures within States than across States; more frequent success in State than Federal courts and legislatures in obtaining court orders or legislation fostering increased equalization; and most States already have programs that promote equalization to at least some degree.

General Structure of State School Finance Systems

Most of the Nation's LEAs receive revenues from local, State, and Federal governments. These revenues differ with respect to the level of government that provides them, the taxes by which they are raised, the degree of restrictions on their use, and their general tendency to increase or decrease disparities in spending. **Local revenues** may be raised directly by the LEA itself (fiscally independent LEAs), or be raised, and provided to the LEA, by a local unit of general government, such as a county or city (fiscally dependent LEAs). Whatever their source, local revenues are usually available for general purposes--i.e., are not restricted in their use to specific types of educational services or pupils--except that sources of funds for such capital expenses as construction are usually distinguished from those for current operating expenses. Capital revenues are typically raised through bonds or other relatively long term borrowing.

Most of the Nation's LEAs receive revenues from local, State, and Federal governments. These revenues differ with respect to their general tendency to increase or decrease disparities in spending.

The primary source of local revenues for public elementary and secondary education is the property tax.[16] This tax is an annual percentage of the

[15]Source: U.S. Department of Education. Office of Educational Research and Improvement, National Center for Education Statistics. *Public Elementary and Secondary State Aggregate Nonfiscal Data, by State, for School Year 1988-89; and School Revenues and Expenditures for Fiscal Year 1988.* Mar. 1990. p. 17.

[16]In 1986, 74 percent of the tax revenues collected by all local governments in the United States from their own sources (i.e., excluding intergovernmental transfers from State governments and the Federal Government) were from property taxes. Source: U.S. Department of Commerce, Bureau of the Census. *Statistical Abstract of the United States, 1989.* p. 268.

assessed value of residential and commercial "real" property (i.e., buildings and land) and, in some localities, "personal" property (i.e., automobiles, other vehicles, and occasionally such other items as livestock). As will be discussed further, variations in the value of such real or personal property, relative to the number of school-age children, in a locality is usually the primary cause of variations in expenditures per pupil among the LEAs of a State. Some localities also raise revenues through local sales or personal income taxes, frequently as a local supplement to State taxes.

State revenues for public elementary and secondary education are raised from a variety of sources, primarily personal income and retail sales taxes, a variety of "excise" taxes such as those on tobacco products and alcoholic beverages, plus lotteries in several States. In 1987, 32 percent of all State government tax revenues were derived from general sales taxes, 31 percent from individual income taxes, and 9 percent from taxes on fuels, alcohol, and tobacco products. The education programs through which these State revenues are spent vary widely and are frequently complex. They typically involve one or more programs of the following general types:

- aid that can be used for general educational purposes, and that is distributed in equal amounts per pupil in each LEA,

- aid that can be used for general educational purposes, but that is distributed in a manner intended to help equalize resources among the State's LEAs--i.e., greater amounts per pupil are allocated to economically "poor" LEAs than to "wealthy" LEAs,

- aid that can be used only for specific types of educational programs, or to serve specific types of pupils, but that is allocated to all LEAs in proportion to their enrollment,

- aid that can be used only for specific types of educational programs, or to serve specific types of pupils, and that is allocated to LEAs in proportion to their enrollment of particular types of pupils (e.g., the number of pupils from poor families, the number of handicapped pupils, etc.), and

- aid that can be used for general educational purposes, but that is distributed to LEAs in proportion to their number of pupils with certain characteristics (e.g., the number of pupils from poor families), or on the basis of some factor that is assumed to reflect relatively high costs (e.g., population sparsity or density).

With respect to LEA variations in expenditures per pupil, the net effect of State grants is usually at least moderately equalizing, especially if the extra costs of meeting special needs of disadvantaged or handicapped children are taken into account in defining the meaning of "equalization." State programs either provide equal grants per child in the State, provide grants in proportion to the number of special needs pupils, or directly attempt to equalize resources by providing disproportionally large grants to LEAs that are relatively poor

in terms of taxable property wealth or income per pupil.

With respect to LEA variations in expenditures per pupil, the net effect of State grants is usually at least moderately equalizing, especially if the extra costs of meeting special needs of disadvantaged or handicapped children are taken into account.

States where the State share of public elementary and secondary education revenues is especially *high* (two-thirds, 66.7 percent, or above) include: Hawaii (86.7 percent in 1987-88), New Mexico (75.9 percent), California (70.2 percent), Delaware (68.5 percent), North Carolina (66.7 percent), and Washington (75.4 percent). States with especially *low* (40 percent or below) State shares of public elementary and secondary education expenditures include: New Hampshire (7.6 percent in 1987-88), Nebraska (22.2 percent), South Dakota (26.4), Oregon (27.7 percent), Vermont (33.4 percent), Michigan (35.3 percent), Illinois (36.8 percent), Maryland (38.7 percent), Nevada (38.7 percent), and Colorado (39.2 percent).[17] It is noteworthy that some of the States with large disparities in education spending among their LEAs are also among those where the State share of education spending is the lowest--e.g., Illinois and Michigan; while some of the States with small spending disparities have especially high State shares of revenues--e.g., Delaware, Hawaii, North Carolina, and West Virginia. However, it is possible for a State to have low State shares of expenditures but low expenditure disparities, as in Nevada.

There has been a long-term trend of States providing increasing shares of total public education revenues. To the extent that State revenues replace local funds, this should result in an overall decrease in local expenditure inequalities.

There has been a long-term trend, over approximately the past 25 years, of States providing increasing shares of total public education revenues, and of localities--and more recently the Federal Government--providing decreasing shares. Between the 1967-68 and 1987-88 school years, for all States in the aggregate, the State share of revenues for public elementary and secondary education rose from 38.5 percent to 49.5

[17]Source: U.S. Department of Education, Office of Educational Research and Improvement. National Center for Education Statistics, *Public Elementary and Secondary State Aggregate Nonfiscal Data, by State, for School Year 1988-89; and School Revenues and Current Expenditures for Fiscal Year 1988.*

percent, while the local share fell from 52.7 percent to 43.7 percent, and the Federal share from 8.8 percent to 6.3 percent.[18]

To the extent that State revenues replace local funds, the aggregate increase in State share of public elementary and secondary education revenues might result in an overall decrease in local expenditure inequalities since, as noted above, State funds tend to equalize expenditures within States. However, the trends in several individual States vary from the aggregate national trend toward an increased State role in school finance. For example, the State share of public elementary and secondary education revenues declined in such States as Louisiana, Michigan, New Hampshire, New York, and Tennessee between 1967-68 and 1987-88. In addition, other factors related to school finance disparities might not have remained constant over this period; for example, differences among LEAs in taxable property wealth per pupil might have increased in some States.

Finally, **Federal revenues** for public elementary and secondary education represent a relatively small share of the total--6.3 percent in 1987-88--although this share is more significant for certain LEAs and States. The Federal share of revenues was 10 percent or more in 9 States plus the District of Columbia in 1987-88; the States were Alabama, Alaska, Arkansas, Hawaii, Kentucky, Louisiana, New Mexico, South Dakota, and Tennessee. States where the Federal share of elementary and secondary education revenues is relatively high tend to be either States with low income per capita, such as Arkansas or Kentucky, or high impact aid payments (see footnote 20), such as Alaska and Hawaii.

While there are several Federal programs of aid to elementary and secondary education, each with their own allocation formula or with grants made on a discretionary basis, a large majority of the funds are provided under a few programs, especially aid for:

- education of disadvantaged children, under title I, chapter 1 of the Elementary and Secondary Education Act (ESEA)--approximately 55 percent of total Federal aid for elementary and secondary education for fiscal year (FY) 1990,

- education of handicapped children, under the Education of the Handicapped Act--21 percent,

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[18]Source: U.S. Department of Education. Office of Educational Research and Improvement. National Center for Education Statistics. *Digest of Education Statistics, 1989*. p. 148, and *Public Elementary and Secondary State Aggregate Nonfiscal Data, by State, for School Year 1988-89; and School Revenues and Current Expenditures for Fiscal Year 1988*. p. 14. In 1987-88, the remaining 0.5 percent of revenues came from intermediate education agencies--regional agencies that have been established in some States to provide specific types of services, such as education for the handicapped or vocational education, to two or more LEAs.

- education of children whose parents live and/or work on Federal property, under the impact aid legislation--8 percent,
- drug abuse education under the Drug Free Schools and Communities Act--6 percent, and
- a variety of purposes under the education block grant, title I, chapter 2 of the ESEA--5 percent.

Together, these programs constitute approximately 95 percent of total Federal aid to elementary and secondary education in FY 1990.

Most aid for drug abuse education and all of the education block grant is allocated to States essentially in proportion to total school-age (5-17 years) population, with substantial State discretion over intrastate allocation. Grants for education of the handicapped are allocated to and within States primarily on the basis of counts of handicapped children served. Impact aid is distributed to LEAs in proportion to numbers and types of children whose parents are employed by the Federal Government or who reside on Federal property, locally-raised education revenues, the type of Federal facility, and the degree of impact of that facility on the locality (e.g., what proportion of total enrollment is associated with Federal activities). Finally, chapter 1 grants are allocated to and within States primarily on the basis of the number of children from low income families.

Thus, in terms of the impact of Federal revenues on local revenue or expenditure inequalities, the chapter 1, education of the handicapped, and impact aid programs, in that order, might have greatest effect. This is because of the size of these three programs and their allocation of funds in proportion to certain types of pupils (low income, handicapped, Federally connected), rather than all pupils (as under the chapter 2 and drug free schools programs).

Chapter 1 allocations, based primarily on the distribution of children from low income families, might significantly increase equalization of financial resources among LEAs. Certainly, chapter 1 grants are relatively high in LEAs with concentrations of low income families. Whether this actually results in greater equality of school finance systems depends fundamentally on the relationship between such concentrations and an LEA's ability to raise revenues for public elementary and secondary education. While there is an obvious relationship between local concentrations of poor families, low average income levels for the locality as a whole, and low average property wealth from which local property taxes may be raised, these relationships are not perfect. For example, some urban LEAs may have concentrations of low income families, but also sufficient concentrations of high income families so that the overall income level and average property wealth per pupil are not especially low.

Regarding other Federal programs, the special focus of the impact aid program helps to explain the relatively high Federal share of revenues in such States as Alaska and Hawaii, as well as many LEAs with relatively large Federal facilities, but has relatively little effect on the revenues of most LEAs. While EHA grants are allocated in proportion to handicapped children served, this may have relatively little effect on overall school finance equalization, since the distribution of handicapped children does not appear to be systematically different from that of the general pupil population (see footnote 24).

It is probable that Federal aid to elementary and secondary education has at least a moderately equalizing effect.

It is probable that the relationship between concentrations of children from low income families and ability to raise local property tax revenues is sufficiently strong that chapter 1 grants, and to a lesser extent Federal aid to elementary and secondary education in general, has at least a moderately equalizing effect, albeit indirectly. For example, a recent study concluded that chapter 1 grants are relatively greater not only for LEAs with high poverty rates but also those with relatively low capacity to raise local revenues.[19] However, Federal aid is such a small share of total revenues for elementary and secondary education that this effect is ultimately marginal for the Nation as a whole.

Differences in Pupil Needs Within States

As was noted in the previous section, State school finance programs frequently distribute aid in proportion to each LEA's number of certain types of pupils, rather than in proportion to total enrollment. Some of these programs require that the funds be used only to serve the relevant groups of special needs pupils, while others are general aid programs that are simply allocated in proportion to such pupils. Federal education assistance programs also frequently allocate funds on the basis of the distribution of such special needs pupils. Usually, the specific pupil types are those who are assumed to have special educational needs, with especially high costs of meeting those needs. These groups of "high cost" pupils frequently include:

- handicapped pupils,
- pupils from poor families,
- pupils with especially low academic achievement,

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[19]Orland, Martin E. *Relating School District Resource Needs and Capacities to Chapter 1 Allocations: Implications for More Effective Service Targeting*. Educational Evaluation and Policy Analysis, spring 1988. p. 23-36.

- pupils living in areas that are very sparsely or densely populated, or
- pupils with limited proficiency in the English language.

These pupil groups are not mutually exclusive; many pupils may fall into two or more of these categories. In particular, the groups of pupils from poor families, those with low academic achievement, and with limited English proficiency may frequently overlap.

Many definitions of "statewide school finance equality", such as that in H.R. 3850 and the Federal impact aid program, allow for differences in expenditures that are based on special grants to serve high cost pupils.

These "high cost" pupils are not evenly distributed among LEAs. To the extent that State and Federal aid are allocated in proportion to these pupils, some LEAs will receive more aid, relative to their total enrollment level, than others. While this may make overall expenditures per pupil less equal than would otherwise be the case, this form of unequal expenditures is generally considered to be appropriate, given the additional costs of serving children with special educational needs. Many definitions of "statewide school finance equality," such as that in H.R. 3850 and the Federal impact aid program,[20] allow for differences in expenditures that are based on special grants to serve high cost pupils. Further, the net effect of special needs grants may not be to increase inequality in expenditures per pupil, since LEAs with high proportions of some types of high cost pupils--especially those from poor families, or those with limited English proficiency--may tend to have relatively few local resources from which education revenues may be raised.

[20]The Federal impact aid program, authorized by P.L. 81-874, provides aid to LEAs serving children whose parents work and/or live on Federal property (e.g., military bases, Indian reservations, etc.). In general, States may not take impact aid payments into consideration when determining the amount of State aid that an LEA is eligible to receive. Taking the impact aid payments into consideration would generally result in lower State payments to LEAs receiving impact aid. However, if a State has a school finance equalization program that meets certain standards, the State can take impact aid payments into account, as a local resource, in carrying out that program. Federal regulations in 34 CFR 222.60-69 contain these standards, which are of two alternative types--"expenditure disparity", provision of approximately equal revenues per pupil in each of the State's LEAs, and "wealth neutrality", provision of approximately equal revenues per pupil per unit of tax rate in each LEA. Under both measures, States may define "pupils" in a manner that gives greater weight to those with special needs, such as handicapped or disadvantaged pupils.

such an adjustment. Only data on total enrollment are available, or such variations of total enrollment as average daily attendance or average daily membership. National data on the distribution of special needs pupils by LEA are not yet available, and the data available from certain States are not necessarily comparable across States. As noted earlier, this is a serious weakness of the school finance disparity measures presented in the first part of this report.

Differences in Willingness to Pay for Education Within States

Virtually all State school finance systems, including some that are frequently recognized as providing a high degree of equalization of resources among the State's LEAs, allow for considerable local variation in expenditures based on differences in willingness to pay local taxes for education. While ability to pay--the amount of revenue that a locality can raise for each unit of tax rate--obviously has a substantial influence on the resulting spending level, the tax rate has a significant effect as well.

Most State school finance systems allow considerable local variation in expenditures based on differences in willingness to pay local taxes for education.

State school finance programs fall into three general categories with respect to local tax rates. The first category consists of a small number of States where the State simply provides flat grants--i.e., equal amounts per pupil throughout the State, without consideration of local differences in ability to raise revenues. Localities may then raise whatever additional revenues they wish, and are able to raise, from local property and other taxes. Obviously, this can result in wide disparities in total spending per pupil in different localities.

In the second, and largest, group of States, so-called *foundation programs* provide varying State shares of revenues, depending on measures of local fiscal capacity, or tax-raising ability. In these States, an assumed total amount of expenditures is specified by State legislation. This assumed total is the same for all LEAs in the State, although it may be modified by weights assigned to different types of pupils. The State then pays each LEA a percentage of this assumed total that varies with local property wealth per pupil, or some other measure of capacity to raise revenues. The State percentage is higher for LEAs with low capacity per pupil, and lower for those with high capacity per pupil.

Foundation finance plans vary in their provisions regarding local tax rates. In most States with foundation plans, the State specifies at least a minimum rate at which localities must tax themselves. In other States, a local tax rate is assumed in the calculation of the foundation plan's State share, based upon the difference between the assumed total expenditure level and the State percentage of this, but localities are not actually required to tax themselves at this rate.

In effect, foundation plans are designed to equalize fiscal capacity and expenditures among a State's LEAs only up to a certain minimum expenditure level--the assumed total level of expenditures per pupil used to determine the State percentage share. A concern about such programs is that this minimum expenditure level may be relatively low compared to either the actual total expenditures per pupil in many LEAs, or compared to the expenditure level necessary to provide a "quality" education. With LEA expenditures equalized only up to a minimal level, there may remain large variations in local expenditure levels in the State, and only relatively affluent LEAs may be able to raise sufficient local revenues for a "quality" education.

In the third group of States, the school finance program has a *guaranteed tax base* feature. In 1986-87, nine States had programs of this general type.[21] Under such programs, the State attempts to equalize school financial resources to some extent by equalizing the amount of revenue per pupil each LEA can raise per unit of tax rate, while leaving decisions about the tax rate level to the localities. For example, a State might estimate the amount of revenue per pupil that the average LEA--or perhaps one of the wealthier LEAs--could raise per unit of property tax rate, and guarantee that amount to each of the State's LEAs. If an LEA is unable to actually raise this amount from its local taxable property, the State government would make up the difference. LEAs that do raise at least the guaranteed level of revenues per pupil, per unit of tax rate, would receive no funds from the State under this program, although they might still receive State funds under other school finance programs, such as grants to serve specific groups of high cost pupils.

To illustrate this concept, assume a State has three LEAs. The level of taxable property value per pupil is $100,000 in one of the LEAs, $200,000 in the second, and $300,000 in the third. The State's school finance program has a guaranteed tax base feature, with the guarantee level equal to the revenues per pupil, per unit of tax rate, (e.g., percent of assessed property value) of the average LEA in the State. Further assume that each LEA has 10,000 pupils, but that the tax rates selected by the LEAs vary--1 percent of assessed property value per year in the first LEA, 1.5 percent in the second, and 2 percent in the third. The resulting revenues raised by each LEA, including State subsidy, are listed in the following table 5.

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[21]The States were Alaska, Colorado, Connecticut, Kansas, Michigan, New Jersey, Pennsylvania, South Dakota, and Wisconsin. In three of these States, the school finance program was not explicitly of the guaranteed tax base variety, but was of another type (*district percentage equalizing with level of local effort not specified*) that had the same effect. Source: *Public School Finance Programs in the United States and Canada, 1986-87*, by Richard Salmon, *et al.*, American Education Finance Association, 1988. p. 5.

TABLE 5. Illustration of Simplified Guaranteed Tax Base Formula

LEA	Tax rate	Taxable wealth per pupil	Revenue raised per pupil	State subsidy per pupil	Total revenue per pupil
1	.010	$100,000	$1,000	$1,000	$2,000
2	.015	200,000	3,000	0	3,000
3	.020	300,000	6,000	0	6,000

In this simplified case, only the least wealthy of the three LEAs receives any State subsidy, enough to increase its ability to raise revenues per pupil up to the level of the average LEA (number 2). Both this average LEA, and the wealthy LEA number 3, receive no State funds. However, actual expenditures per pupil are still higher in LEAs 2 and 3 than in number 1. This results from two factors: first, the tax base guarantee level is that of the average LEA in the State, not the wealthiest; second, LEA number 1 chooses to tax itself at a lower rate than do the other 2 LEAs. Even if the tax base guarantee were at the level of the wealthiest LEA, LEA number 1 would still have only $3,000 in total (local plus State) revenues per pupil, because of the difference in tax rates.

There are many State variations on the guaranteed tax base theme. As noted above, the tax base guarantee might be set at a relatively high or low level. Some States place a cap on local tax rates, or require that a minimum tax rate be set, in addition to guaranteeing the tax base, in order to help equalize not only the revenues that can be raised but also the actual revenues that are raised by different LEAs. A few States even provide for "recapture" of certain of the "excess" revenues--those above the guarantee level--from wealthy LEAs, for redistribution to less wealthy LEAs in the State. There are also differences in the definition of "pupil" in setting the revenue per pupil that can be raised per unit of tax rate. In this context, pupils may include a simple count of all pupils, or weighting schemes may be used to provide additional revenues on behalf of specified high cost pupils, such as the handicapped.

It is extremely difficult to meaningfully compare property tax rates among LEAs in different States. First, data on tax rates by LEA are generally not available. More important, policies and practices in assessing the value of real estate and other property vary widely among, and frequently within, States, making it difficult to accurately compare tax rates even when these are available. LEAs vary in the intended, as well as the actual, relationship between assessed value and market value of homes, shops, factories, and other taxable property; as well as in the frequency of reassessments. Some localities and States place limits on assessment increases, regardless of market values.

Sources of Local Differences in Willingness to Pay for Education

Localities may differ in their willingness to pay for education for a variety of reasons. While existing research on factors associated with especially high, or low, willingness of localities to tax themselves for public elementary and secondary education is not extensive, and much of it is not very current, certain general patterns appear in the findings from these studies.[22] These patterns are discussed briefly below.

Localities vary significantly in the share of households that include children attending public school. This results from both differences in the overall age distribution in the locality, and in the proportion of school-age children who attend nonpublic schools. It is generally found that if all other relevant factors are equal, LEAs with higher proportions of households with school-age children, and with larger proportions of those children attending public schools, will support higher local taxes for those schools. Obviously, there is a direct interest in the public schools among such families.

One source of concern is the general finding that preferences for education spending are partially a function of the average education and income levels[23] of the taxpaying population--i.e., all other factors being equal, those with higher average levels of education among adults, or higher income per school-age child, tend to be more willing to spend tax

Localities with higher average income are not only able to raise more funds per unit of tax rate in most cases, but are also willing to pay higher tax rates for public education.

[22]Among these studies, many of which focus on voting patterns in local school bond referenda, are *School Tax Referenda: A Case Study of the Relationship Between Referenda Outcomes and Demographic Variables*, by Raymond L. Lows. Journal of Education Finance, summer 1987. p. 30-44; *A Study of the Relationship Between Selected Socioeconomic Variables and Local Tax Effort to Support Public Schools in Illinois*, by Thomas Wei-Chi Yang and Ramesh Chaudhari. Dec. 1976; *The Relationship Between Socioeconomic Variables and State Effort for Education*, by William E. Sparkman, Journal of Education Finance, winter 1977. p. 335-355; and *Tax Capacity, Tax Effort, and State Funding of Schools in Ohio*, by Matthew C. Cohen, Journal of Education Finance, fall 1983. p. 141-156.

[23]In the existing research on preferences for education spending, "income" is sometimes defined in terms of personal income per capita, at other times in terms of property wealth per capita. While property wealth is more relevant to local variations in ability to pay for education, through its relationship with local property taxes, both average property values and average income are closely related in the aggregate, in spite of many individual cases of families with high property wealth but low income (such as some elderly persons), or vice-versa.

funds for education than persons with less education or income. Thus, localities with higher average income--or with higher average education levels, that are themselves associated with higher average income--are not only able to raise more funds per unit of tax rate in most cases (see below), but are also willing to pay higher tax rates for public education.

If this is true, then even complete equalization of revenues per pupil that can be raised per unit of tax rate might still result in higher spending in localities with higher income and education levels. To the extent that higher education spending leads to higher education and income levels among a school system's graduates, this would tend to amplify and continue existing inequalities of education and income among different types of localities.

As noted earlier, one frequently used definition of "school finance equalization" is based on equality of revenues per pupil raised per unit of local tax rate, not on the actual revenues or expenditures per pupil. Such a definition emphasizes local autonomy in determining tax rates for education, while assisting LEAs with relatively little taxable wealth. The primary advantage of this method is that LEAs are given substantial freedom to express their preferences for education spending. The chief concern is that large variations in actual spending per pupil can result, and that these variations may be systematically related to the average income and education levels of a locality's taxpayers (see below). Whether the effect of supporting local autonomy outweighs the effect of allowing local expenditure variations is ultimately a matter of individual political philosophy.

Differences in Ability to Pay for Education Within States

A primary cause of differences in expenditures per pupil among a State's LEAs are differences in taxable resources per pupil--i.e., the ability to pay for education. LEAs may differ very substantially in their level of property wealth and other resources subject to local taxation, relative to their number of pupils, which can lead to large differences in the amount of revenues raised per unit of tax rate.

Those concerned about inequalities in State school finance systems are perhaps most frequently concerned about disparities that result from differences in ability to pay for education, rather than from differences in willingness to pay, or differences in the distribution of high cost pupil populations (see above). Several States have addressed this concern by either providing greater equality in revenues raised per pupil, per unit of tax rate, as described above, or by directly providing more State funds to less wealthy LEAs, whatever their local tax rate.

To the extent that less wealthy LEAs have disproportionally more high cost pupils, State and Federal grants allocated on the basis of such pupils will reduce inequalities resulting from differences in ability to pay for education. Certainly less wealthy LEAs tend to have disproportionally high numbers of children in certain high cost pupil groups--especially those from low income families, and probably those from non-English language backgrounds.

However, some other types of high cost pupils, such as the handicapped, appear to be more widely dispersed among LEAs of all income and wealth levels.[24]

Those concerned about inequalities in State school finance systems are perhaps most frequently concerned about disparities that result from differences in ability to pay for education, rather than from differences in willingness to pay, or differences in the distribution of high cost pupil populations.

While ability to pay for education is directly related to average property and other taxable wealth and income in LEAs, it may be indirectly related to the average size and scope of LEAs. If all else is equal, States with relatively large, economically heterogeneous, usually countywide, LEAs would have greater equality of taxable resources per pupil among their LEAs than States with relatively larger numbers of smaller, economically homogeneous, LEAs. For example, several of the States listed in table 4 above as having relatively low expenditure variations are dominated by large, countywide LEAs (e.g., Florida, Maryland, Nevada, North Carolina, South Carolina, and West Virginia), while virtually all of the States listed in table 3 as having relatively high expenditure variations have large numbers of relatively small LEAs, compared to the size of the State.

[24]A recent report prepared for ED concluded that, "[A]lthough individual districts differ in the percentage of handicapped pupils and patterns of services, few systematic differences were found among the districts along the dimensions of district size, urbanicity, region, and wealth. The one notable difference is the tendency for large, urban school districts to serve a larger share of their special education enrollment in self-contained programs." *Patterns in Special Education Service Delivery and Cost*, by Mary T. Moore, *et al.* Decision Resources Corporation, Dec. 1983. p. 38.

Differences in Costs of Providing Public Elementary and Secondary Education

A final factor that influences both the ability of localities to raise revenues for public elementary and secondary education, and the amount of goods and services that can be purchased with those revenues, is variation in the costs of providing educational services among localities in each State. Within each State, the costs for teacher salaries, supplies, school construction, etc., may vary widely. In order for a State school finance system to provide substantially equal resources for each pupil, after adjusting for differences in pupil needs, it might be appropriate for the system to adjust payments in consideration of these cost differences--i.e., provide more revenues per pupil in LEAs with relatively high costs.

Cost differences are differences in amounts paid while holding quality and need constant.

In this context, it is important to distinguish between differences in *costs* and differences in *prices*. Prices are the amounts actually paid for units of a good or service in different LEAs. However, the good or service may not be of the same quality in the different localities--e.g., the average teacher, school building, etc., in some localities may be of higher quality in some LEAs than in others. Also, differences in expenses may result from differences in pupil needs, as discussed previously. Cost differences are differences in amounts paid while *holding quality and need constant*. The intent is to pinpoint differences in prices for items of equal quality in different localities.

The cost differences referred to in this section are also distinct from differences in the distribution of high cost pupils, as discussed earlier. Here we do not refer to differences in aggregate costs that result from varying proportions of pupils who are handicapped, from low income families, have limited English language proficiency, etc. Rather we refer to differences in the cost of providing the same types of services to the same types of pupils--e.g., differences in the costs of providing the same mix of educational services, to children with the same handicaps, in different LEAs.

There are several barriers to implementing such a cost of education adjustment in a school finance formula. First, there is no source of objective and comprehensive data on local cost differences.[25] States that include cost

[25]While the U.S. Bureau of Labor Statistics provides price index data for localities, these are available only for selected metropolitan statistical areas (MSAs). Since the quality of goods and services is held constant in these calculations, these are really "cost indexes" as defined in this section. However, these indexes cover only the prices for consumer goods and services, and are not available for any non-metropolitan areas, as well as many MSAs. In addition, these indexes measure only the rate of change in consumer prices

(continued...)

factors in their school finance formulas, such as Florida, must gather their own cost data, which can be an expensive and time-consuming process if the cost measure is at all comprehensive. Second, it is very difficult in practice to distinguish between differences in costs for a resource of constant quality, and differences in price of the resource that derive from variations in the quality of the goods and services being purchased. For example, teacher salary expenses may be significantly higher in a wealthy suburban LEA of a State than in a rural area. The expense difference may reflect a combination of higher costs for a teacher of equal quality, as a result of tighter labor supply and demand conditions in the suburb, plus differences in teacher "quality"--i.e., number of years of experience, educational level, or other characteristics that may be associated with greater teacher effectiveness[26]--on average among the teachers hired by the suburban LEA.

Finally, differences in costs for the most expensive item that school systems buy--teacher salaries--also reflect the extent of organized labor activity in different localities. Teacher salaries may differ in one LEA of State from those in another largely because one has an active and effective teacher union and the other does not. It may be questioned whether State school finance systems should compensate for such cost differences.

Thus, of all factors that significantly affect revenues and expenditures for public elementary and secondary education, cost variation is probably the most difficult to measure and accommodate. Differences in amounts spent by different LEAs for units of an educational resource--e.g., a teacher's salary--result from a variety of factors: ability to pay, differences in teacher "quality," extent of teacher unionization, general labor market conditions in the locality, etc. This may be why relatively few States include cost adjustments in their school finance formulas. Several of the States that do have cost adjustments in their school finance formulas consider only differences in teacher salaries that result from varying levels of teacher education and experience.[27] While such formulas adjust for a major source of differences in the largest cost item of elementary and secondary school systems, they overlook other sources of cost differentials, and reward LEAs for a "cost difference" that is really a "quality difference" as we have defined these

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[25](...continued)
within each of the selected MSAs, not com
parative price levels in different MSAs.

[26]A further complication is that there may be substantial debate over what constitutes greater "quality" in teachers or other educational resources. At the least, teacher pay scales usually provide higher salaries for teachers with greater experience or more years of formal education. The school finance program in one State, Minnesota, has a cost adjustment that considers only differences in teacher salaries that are due to experience and education level.

[27]The school finance programs of Indiana, Minnesota, Utah, and West Virginia contain such teacher salary cost adjustments.

terms. In other words, LEAs are compensated only for teacher salary differences related to years of education and experience--a "quality" factor, over which LEAs have some measure of control through their hiring and retention practices--but not for differences in costs for teachers of the same "quality", which result from local labor market supply and demand conditions over which LEAs have virtually no control.

CONCLUDING REMARKS

According to available data, from the U.S. Census Bureau and other sources, there are significant differences in expenditures per pupil for public elementary and secondary education in virtually every State. We are unable to determine the extent to which these expenditure differences result from the local variations in factors that can cause such differences to occur: high cost pupil populations, willingness to pay, ability to pay, costs of providing education, or other relevant factors. Many advocates of greater equalization of educational resources within the States agree that some of these factors--e.g., different proportions of high cost pupils, or different costs of providing equivalent educational services--should result in differences in expenditures per pupil among LEAs, while others, especially differences in ability to pay, should not. In the future, data provided from Census, U.S. Department of Education, and other sources should help to answer some, but not all, of these questions.

Whatever the data limitations, public and legislative interest in school finance issues, especially at the State but also at the Federal level, is likely to continue to increase. This results primarily from judicial actions in several States, and concern about the availability of resources to pay the costs of education reforms.

The current Federal role in school finance systems is indirect and generally marginal, except perhaps in States and LEAs with relatively high concentrations of children whose parents are poor or who live or work on Federal facilities. While some would prefer that the Federal Government directly support greater equalization of education resources both within and between the States, this is unlikely to occur to a substantial degree in the near future, due to the large costs that would likely be involved, and the lack of Federal court activity demanding such equalization.